

Thermoforming Tolerance Guide

Formed Dimensions:

US Units		Metric	
Machined Aluminum Tool			
First 12 inches ± .001" each additional inch	± .020"	First 300mm +/- .025mm each additional 25mm	± .50mm
Hole diameters (formed)	± .010"	Hole diameters (formed)	± .25mm
Angles	± 1°	Angles	± 1°
Cast Aluminum Tool			
First 12 inches ± .002" each additional inch	± .030"	First 300mm ± .050mm each additional 25mm	± .75mm
Hole diameters (formed)	± .010"	Hole diameters (formed)	± 0.25mm
Angles	± 1°	Angles	± 1°
Prototype Tool (no temperature control)			
First 12 inches ± .002" each additional inch	± .045"	First 300mm ± .050mm each additional 25mm	± 1.20mm
Hole diameters (formed)	± .015"	Hole diameters (formed)	± .40mm
Angles	± 2°	Angles	± 2°

Trimmed Dimensions:

1 Decimal place	± .050" per first 12"	1 Decimal place	± 1.25mm per first 300mm
2 Decimal places	± .030" per first 12"	2 Decimal places	± .75mm per first 300mm
3 Decimal places	± .020" per first 12"	3 Decimal places	± .50mm per first 300mm
± .001" each additional inch up to 48"		± .025mm each additional 25mm up to 1200mm	
± .002" each additional inch over 48"		± .050mm each additional 25mm over 1200mm	
Angles ± 2°		Angles ± 2°	
Hole-to-Hole	± .015", first 6"	Hole-to-Hole	± .40mm first 150mm
± .001" each additional inch up to 48"		± .025mm each additional 25mm up to 1250mm	
± .002" each additional inch over 48"		± .05mm each additional 25mm up to 1250mm	
Hole diameters	± .010" up to .500"	Hole diameter	± .25mm up to 12.5mm
± .001" each additional .100"		± .025mm each additional 2.5mm	

Note: Certain materials and geometries may require additional tolerances.

Any dimension to non-tool surface is "Reference Only".

Sheet thickness is generally ±10%, however starting thickness may vary depending on specific material selected.

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Secondary Operations:

Silk screening, labels, block placement, etc.

US Units	Metric
± .100" for first 12" from a trimmed or measurable tool surface	± 2.5mm for first 300mm from a trimmed or measurable tool surface
± .002" each additional inch	± .05mm each additional 25mm

Note: These are Profile's recommended standard tolerances for our thermoforming (vacuum, pressure and twin sheet) and CNC trimming operations. If there are specific features or dimensions that must be held to a tighter range, we can discuss possible alternatives to accomplish your specific needs.

Fabricated Part Tolerancing:

Dimension	US Units	Dimension	Metric
0 - 5.0"	± .010C	0 - 150mm	± 0.25mm
5.0" - 15.0"	± .020"	151 - 400mm	± 0.5mm
15.0" - 30.0"	± .040"	401 - 750mm	± 1.00mm
30.0" - 60.0"	± .060"	751 - 1500mm	± 1.50mm
Over 60.0"	add .001" per inch	Over 1500mm	add .025mm per 25mm
Angles	± 1°	Angles	± 1°

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